



Lean 6-Sigma Program



CALIFORNIA CORRECTIONAL
HEALTH CARE SERVICES

Diabetic Care Process

California Correctional Institution

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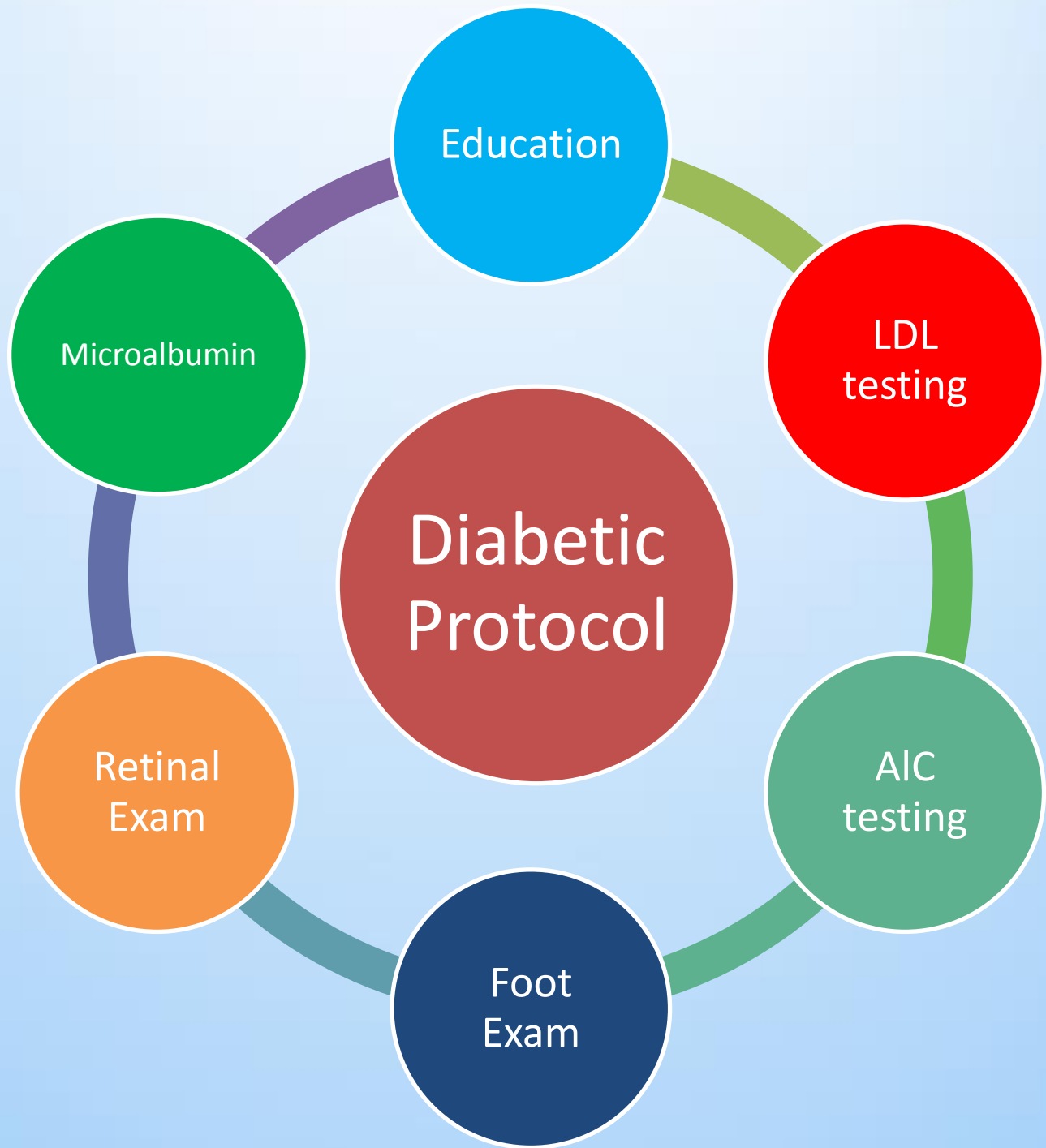




**California Correctional Institution
Tehachapi, CA**

Diabetes Care Process

- ❖ **Problem Statement:** *The care of diabetic inmate-patients at CCI lacks standardized, effective processes. This impacts quality of care to high risk patients and contributes to preventable high cost events. Diabetic treatment protocol compliance is 73%.*
- ❖ **Objective:** *Enhance patient care and treatment adherence by diabetic patients, as evidenced by standardizing care practices and following diabetic treatment protocol 95% of the time.*

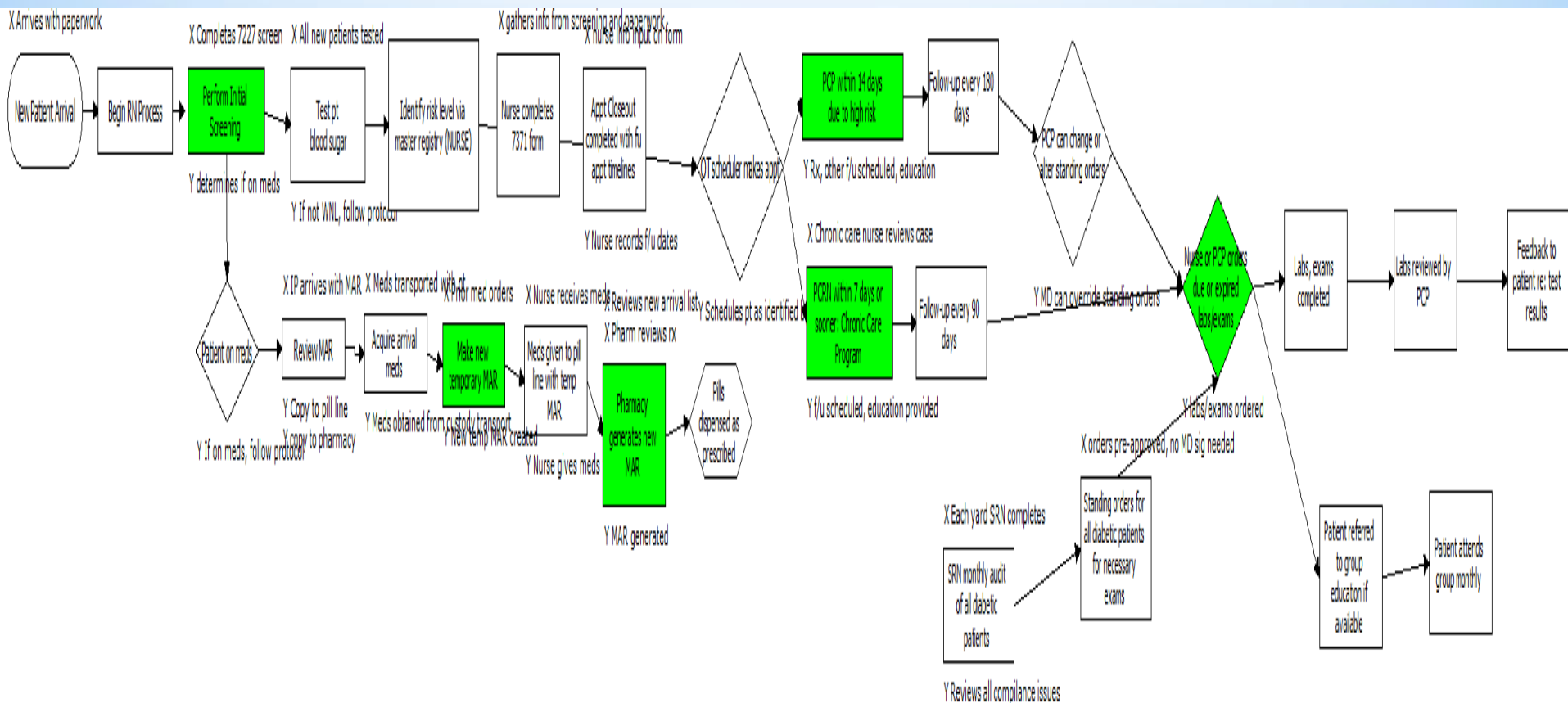


Project Team

- ❖ ***Chris Podratz -- Executive Sponsor***
- ❖ ***Rhonda Litt -- Champion***
- ❖ ***John Baird, PsyD -- Green Belt Candidate***
- ❖ ***Sam Shiesha, MD -- Team Member (Medical)***
- ❖ ***Dana Buford -- Team Member (Nursing)***
- ❖ ***Charles Reinhold -- Team Member (Nursing)***
- ❖ ***Todd Haak – Team Member (Custody)***
- ❖ ***Ronde Snell -- Team Member (Pharmacy)***
- ❖ ***Angelika Marsic, PhD --- Team Member (Mental Health)***
- ❖ ***Dina Wang -- Team Member (Nurse Educator)***
- ❖ ***Myryah Zanchi –Team Member (Analyst)***
- ❖ ***Bonnie Cimental – Team Member (Dental, QM)***
- ❖ *****Inmate Advisory Council***



Initial Process Map



- ❖ White steps are Non-Value Added (NVA)
- ❖ Green steps are Value Added (VA)

Executive Process Map

Patient Level of Care Identified



Medical assessment and follow-up



Ongoing tests and labs



Treatment and education



Audits to ensure compliance

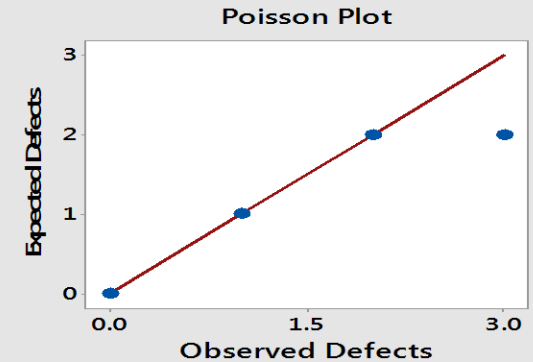
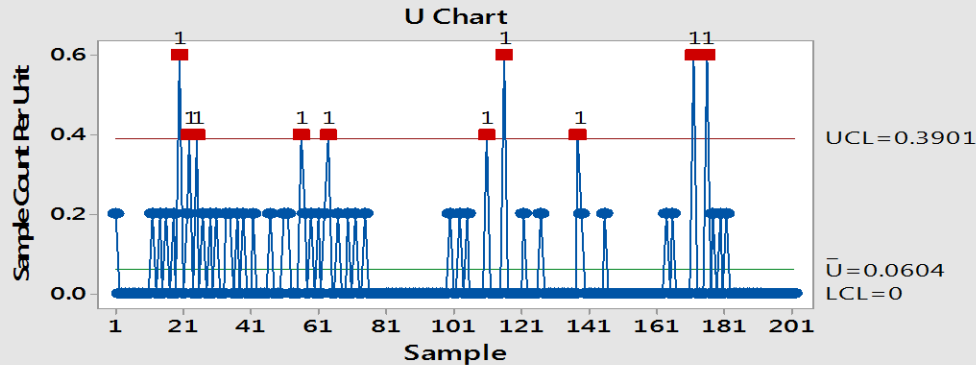
Analysis Tools

The following analytical tools were utilized to determine the “Critical X’s”:

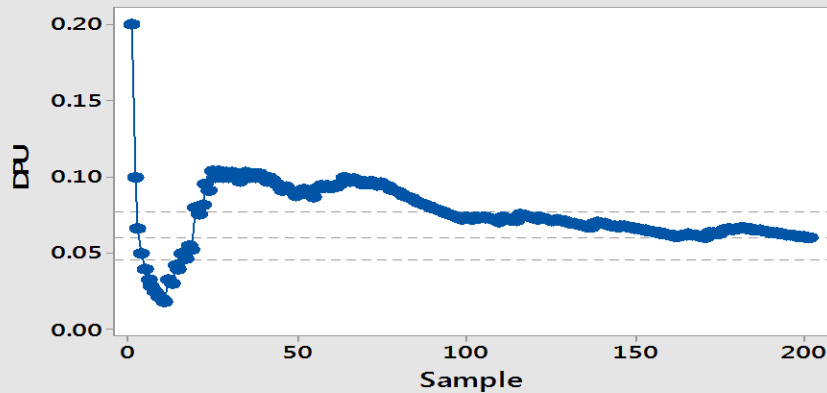
- ❖ Process Map
- ❖ Fishbone Diagram
- ❖ Measurement System Analysis (MSA)
- ❖ Capability Analysis - Poisson
- ❖ Pareto Charts (1st and 2nd Level)
- ❖ Failure Modes and Effects Analysis (FMEA)
- ❖ Hypothesis Testing (Chi-square test for association)

Baseline Capability

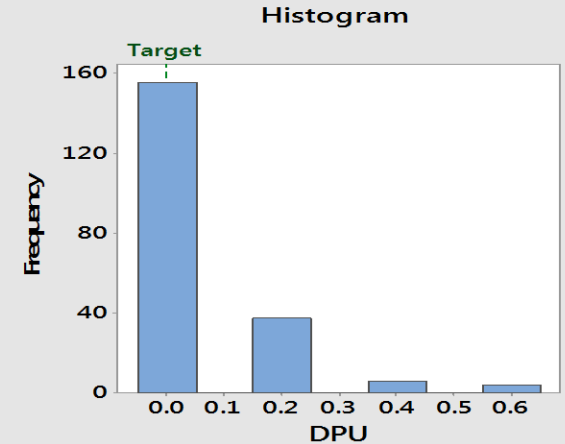
Poisson Process Capability Report for _ missed



Cumulative DPU

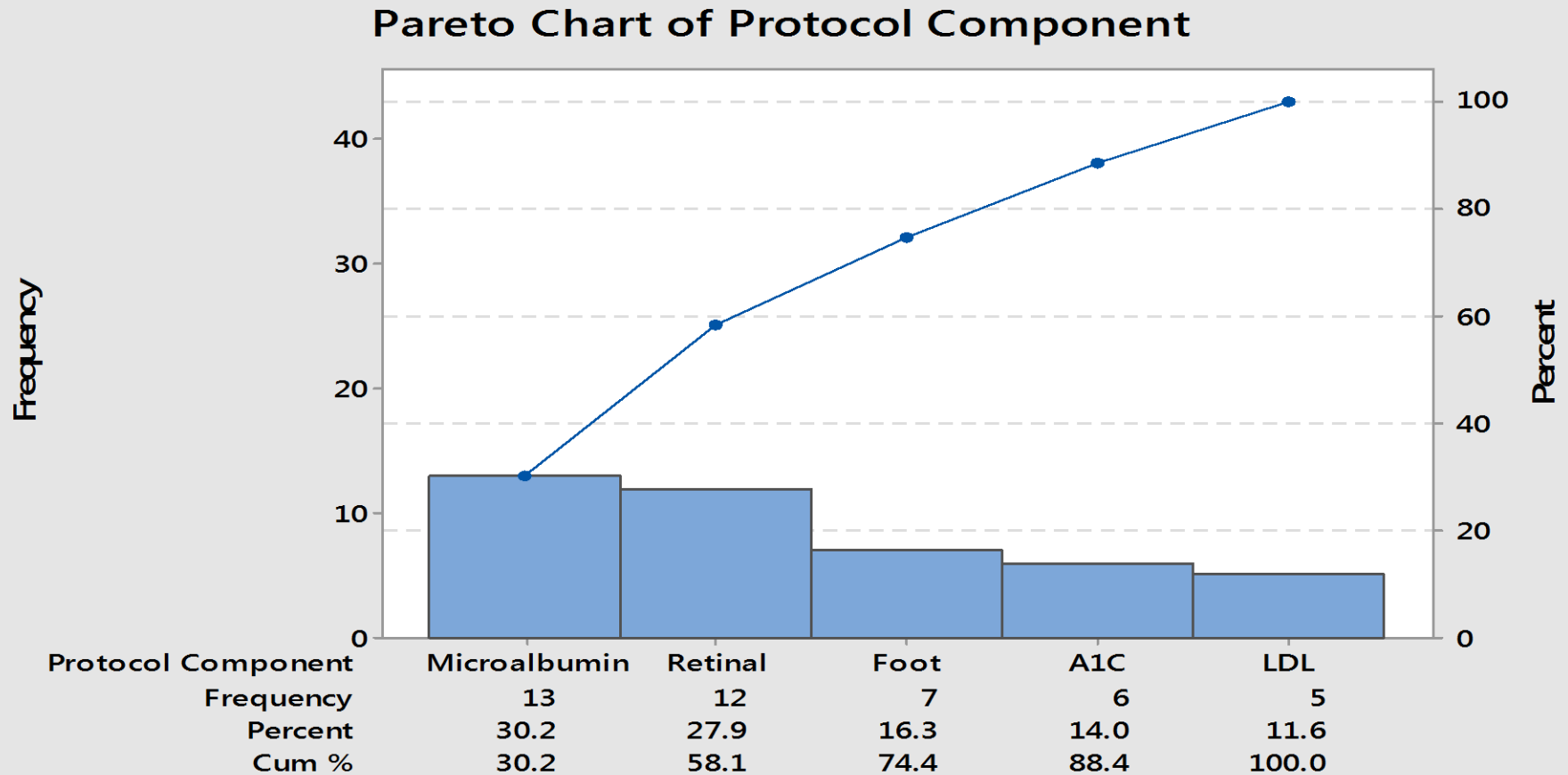


Summary Stats (95.0% confidence)	
Mean Def:	0.3020
Lower CI:	0.2310
Upper CI:	0.3879
Mean DPU:	0.0604
Lower CI:	0.0462
Upper CI:	0.0776
Min DPU:	0.0000
Max DPU:	0.6000
Targ DPU:	0.0000



- ❖ Data is adequate and interpretable
- ❖ Mean Defect per unit (per patient protocol) = .06
- ❖ Baseline treatment protocol compliance = 73%

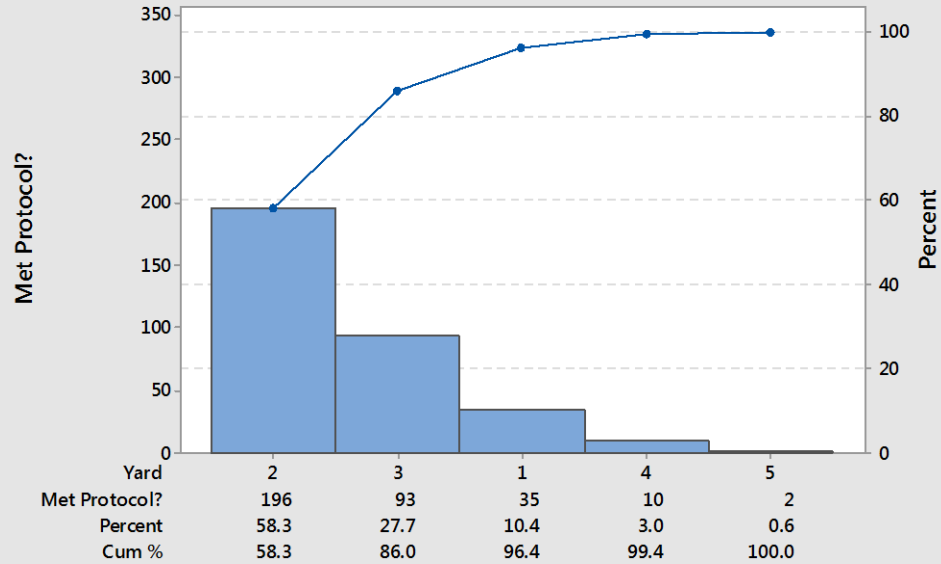
Pareto Chart Level One



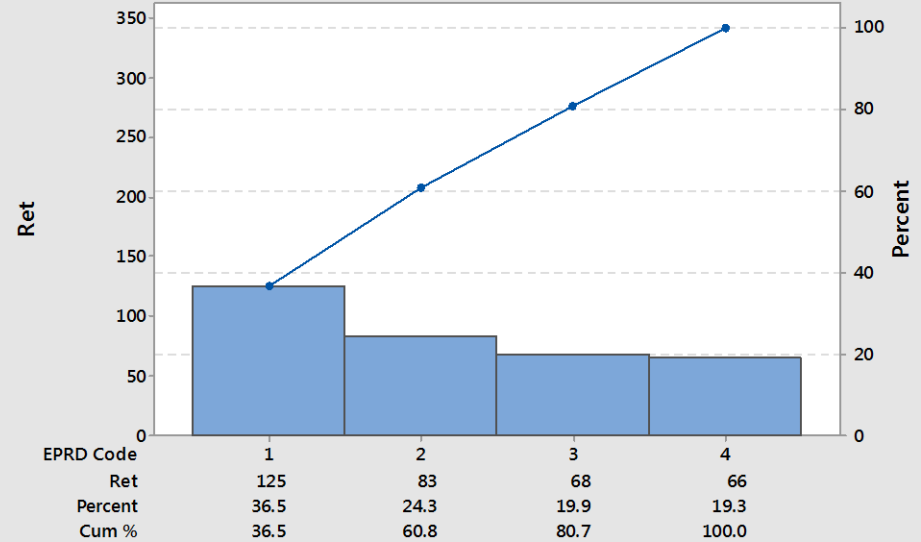
- ❖ Microalbumin test and Retinal Eye exam were out of compliance slightly more than other protocol areas

Second Level Pareto Chart

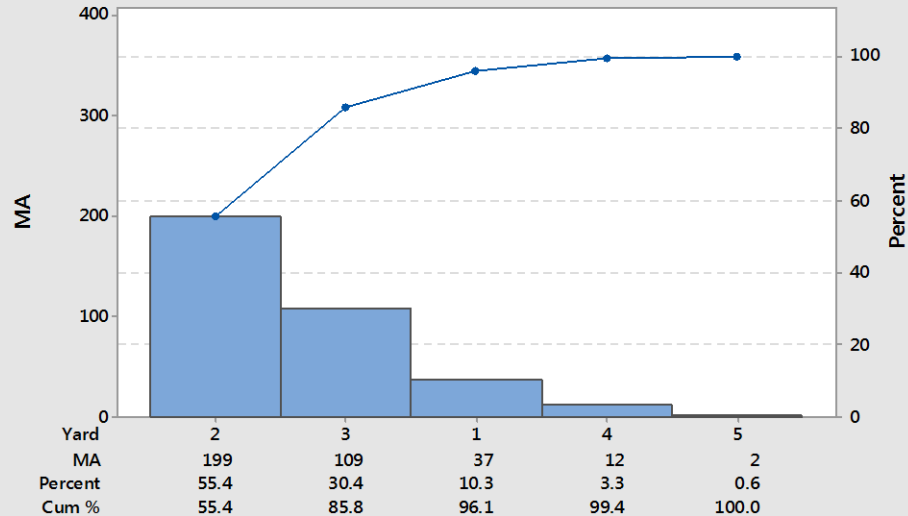
Pareto Chart of Yard



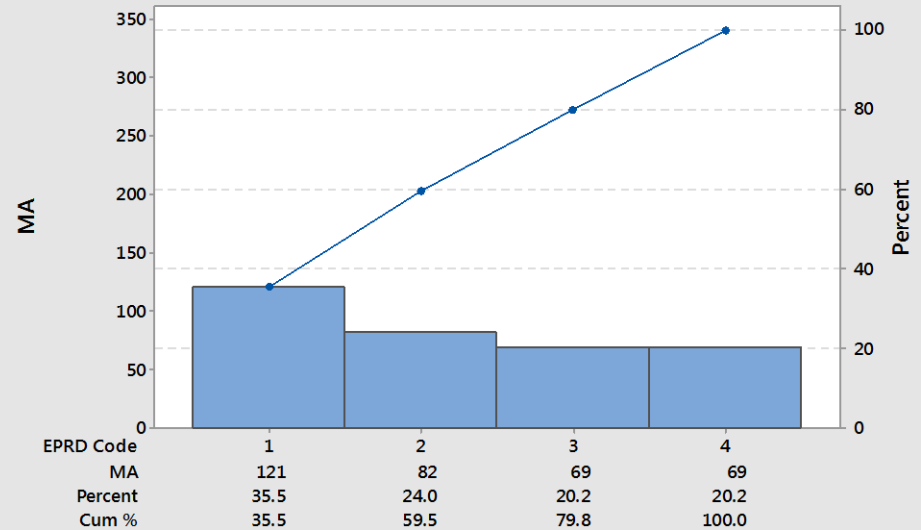
Pareto Chart of EPRD Code



Pareto Chart of Yard



Pareto Chart of EPRD Code



Second Level Pareto Chart

Analysis conducted for closer examination of top areas to identify root cause of non-compliance issues.

Areas analyzed:

- ❖ Failed protocol by yard/ clinical care team
- ❖ Missed retinal exam and microalbumin test by time left on sentence (EPRD) and yard.

Second Level Pareto Charts did not identify a root cause among the areas analyzed.

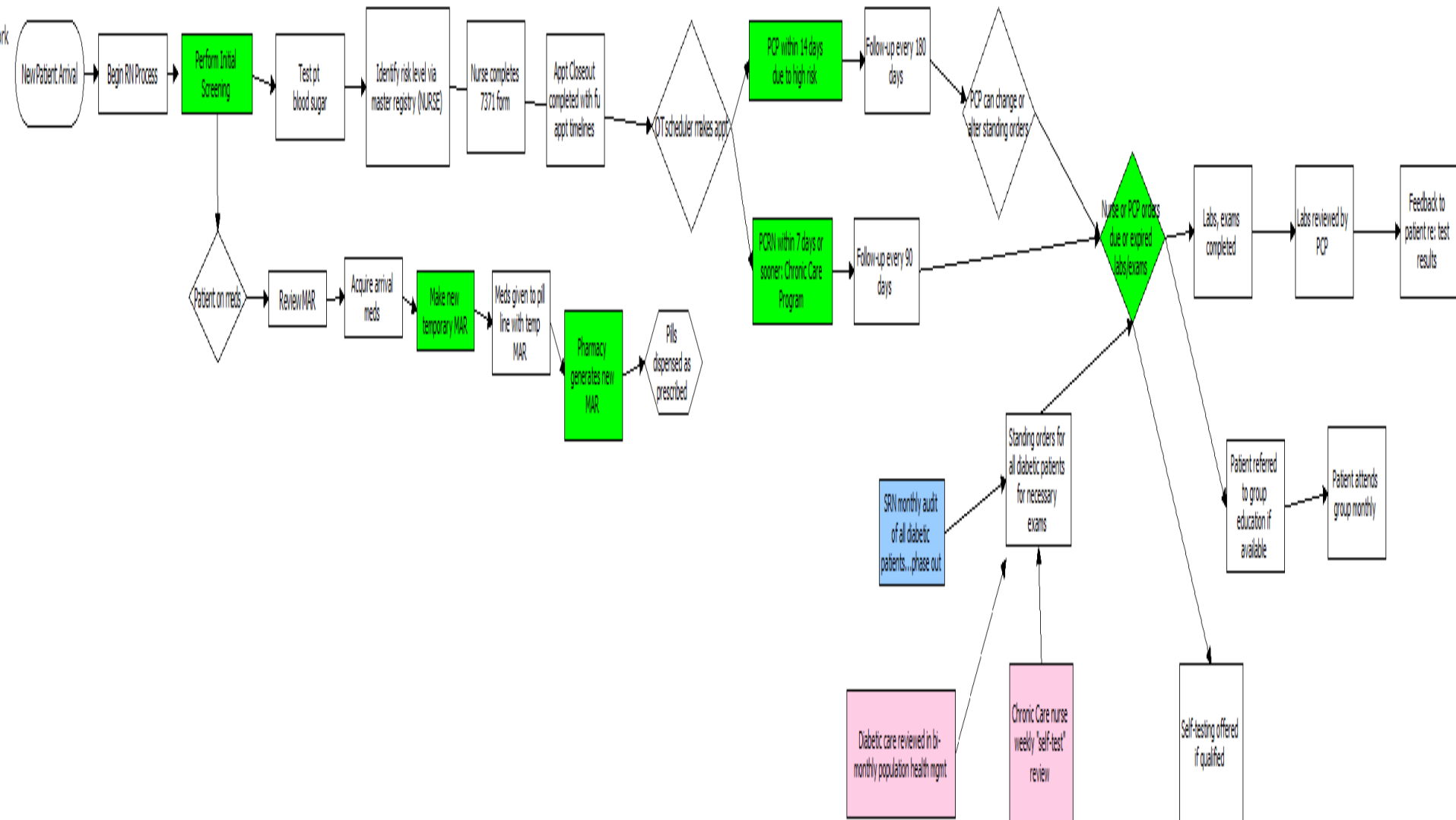
Critical X's (root causes of problems)

- ❖ Care Teams and individual clinicians are not ordering labs/referrals timely
- ❖ Monthly audit performed by nursing is not identifying protocol areas in timely manner
- ❖ New arrivals- Patients arriving to institution out of compliance (approx 20% of non-compliance is due to new arrival patients)

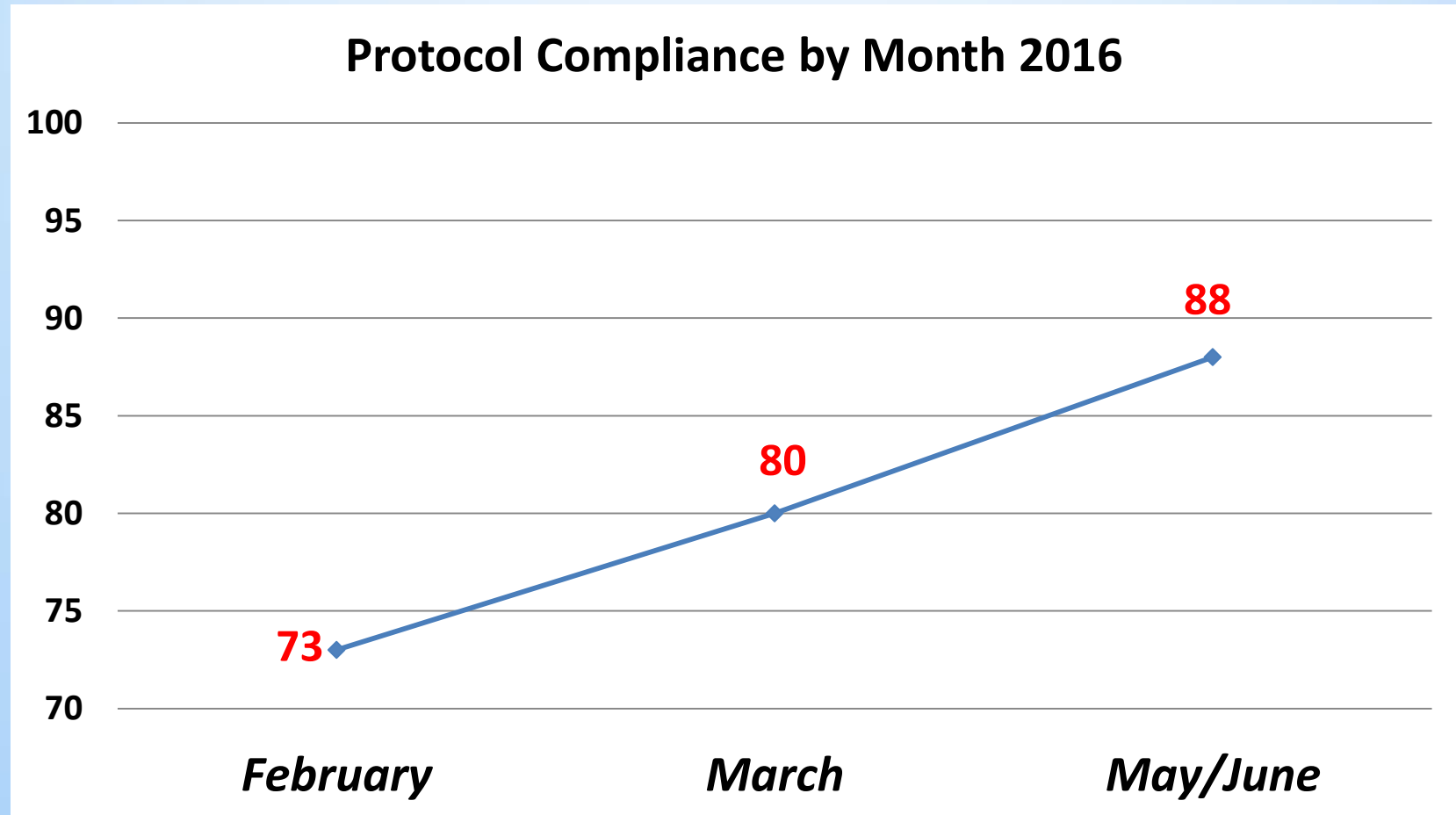
Improvement Techniques

- ❖ Hawthorne Effect
- ❖ Standardized Work
- ❖ Change monthly nursing audit to weekly registry review by clinical care team
- ❖ Population Health Management: HQ implementation
- ❖ Update Local Operating Procedures
- ❖ Early identification of new arrivals

New Process Map



Initial Results



****This data includes new arrivals**

Control Plan

- ❖ Weekly diabetic registry review by care team is being added to local operating procedures.
- ❖ Monthly audit by nursing supervisor will be phased out as weekly care team review is established.
- ❖ Three items on diabetic registry will be utilized to monitor protocol compliance:
 - 1) A1C test date
 - 2) Microalbumin test date
 - 3) New arrivals to registry

Additional Benefits

- ❖ CCI is implementing diabetic group/program that will be rolled out to all five yards over the next 6 months. The program includes 6 weeks of intensive multidisciplinary education followed by quarterly aftercare (in addition to routine follow-up by care team).
- ❖ Working with food services to increase availability of diabetic friendly meal options.
- ❖ Increasing use of glucometers by patients.

Replication: Lessons learned from this project about diabetic care should be useful to other prisons throughout the state in establishing treatment protocols and programs.



Green Belt Contact Information

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